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Serous cystadenoma with ^{68}Ga -DOTATATE uptake

*Mamie Gao, MD; Avantika Masrani; Ajaykumar Morani, MD; Priya
Bhosale, MD*

Case presentation

- 62yo male presented to ER with abdominal pain, fever, and chills and found to have elevated LFTs without frank jaundice.
- CTAP demonstrated pancreatic head mass. DDX: neuroendocrine tumor, serous cystadenoma.
- EUS/FNA initially negative for malignancy, +pancreatic tissue.
- ⁶⁸Ga-DOTATATE and repeat EUS with FNA and core needle biopsy were performed for further characterization.
- MRI abdomen was obtained at an outside hospital.

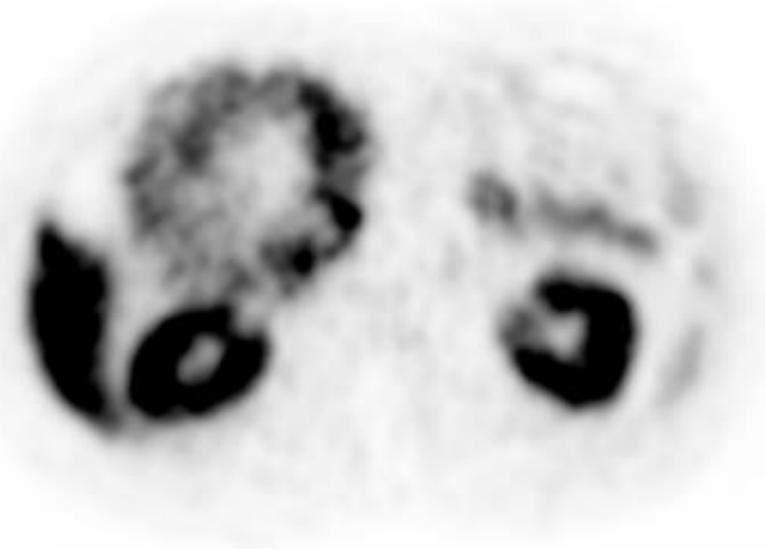


Fig.1: ^{68}Ga -DOTATATE PET/CT:

Mild heterogenous uptake in pancreatic head mass that measures 11 x 10 cm.

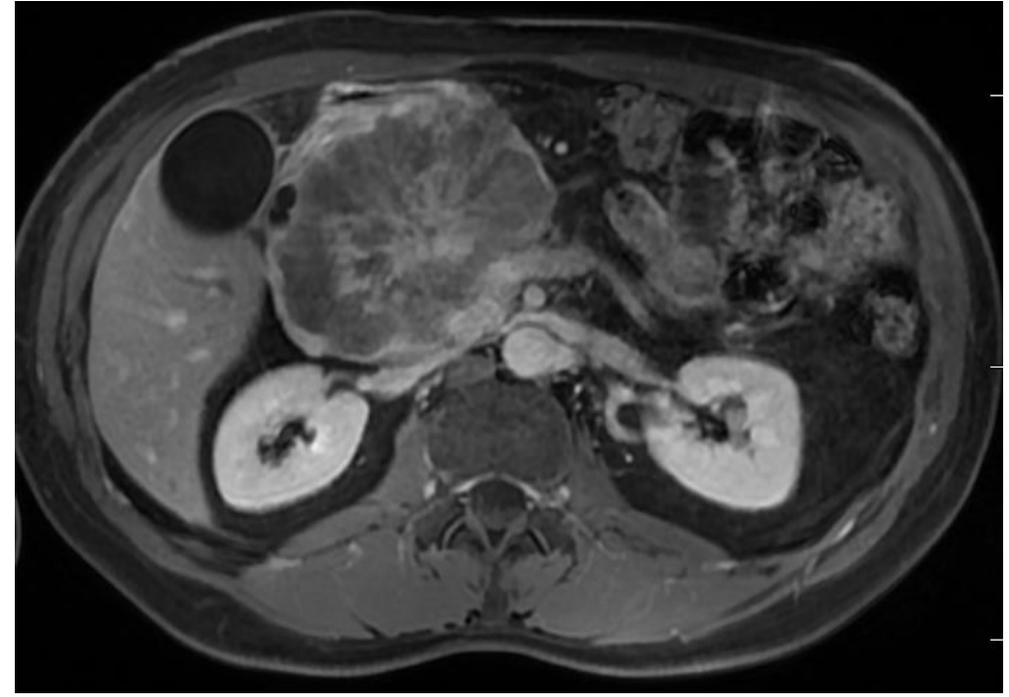
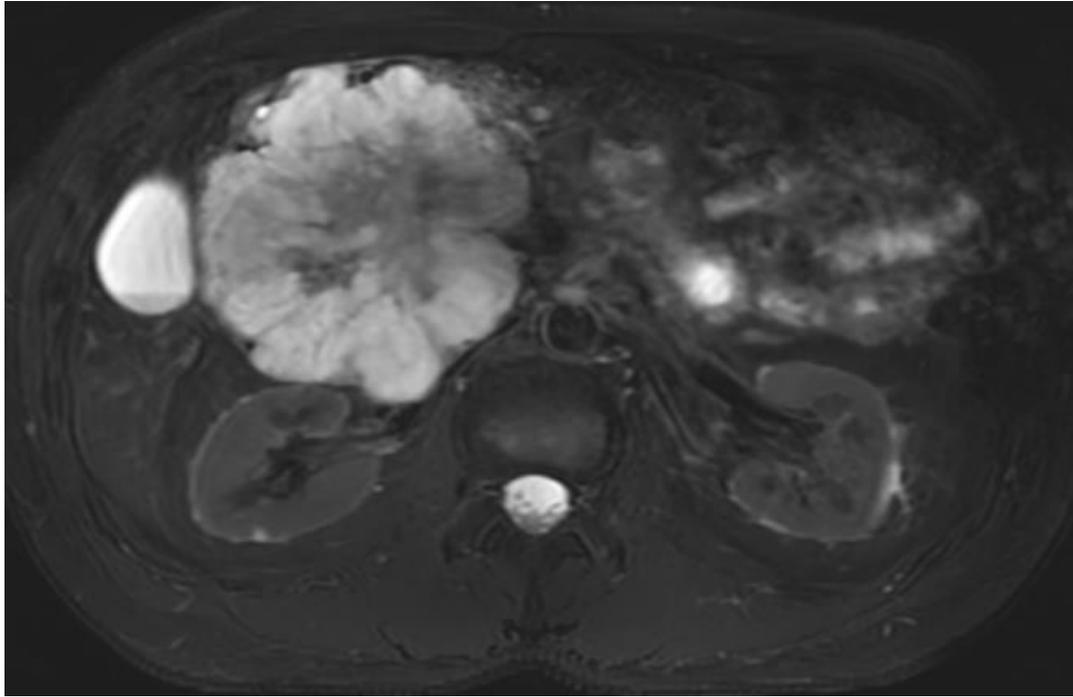


Fig.2: MRI abdomen with and without contrast:

T2 FSE FS and post contrast delay images demonstrates a cystic mass at the pancreatic head that abuts the IVC and right renal vein and encases the SMV and SMV/portal venous junction with associated pancreatic ductal dilation and biliary ductal obstruction.

Discussion

- Serous cystadenomas (SCAs) are benign cystic neoplasms of the pancreas
- Usually in older women ~65 years old
- Composed of numerous small cysts containing serous fluid separated by fibrous septa that radiate from a central scar
- Cysts are usually <1cm but can range from 0.1-2cm
- Morphologic subtypes: polycystic, honeycomb, oligocystic, solid
 - Solid can mimic neuroendocrine tumor
- Usually asymptomatic and can be monitored but if large, can cause abdominal pain and jaundice → surgical resection

Discussion

- Imaging features: multilobulated multicystic mass with central scar and calcifications without communication between cysts and pancreatic duct
- CT: range from unilocular cystic mass to hypervascular solid mass
 - Solid variant: microscopic serous cysts with imaging overlap neuroendocrine tumors
- MRI: cysts with simple fluid signal intensity on T2, enhancing thin fibrous septa on delayed images

Discussion

- Neuroendocrine tumors occur in patients 20-50 years old
- Arises from pancreatic ductal cells and have malignant potential
- Functional neuroendocrine tumors are more common and diagnosed earlier than nonfunctional
- Present as arterially enhancing hypervascular masses and smaller number appear cystic
 - Demonstrates peripheral rim-hyperenhancement not seen in SCA
- Associated with liver metastases and lymphadenopathy
- Surgical resection is the only curative treatment

Discussion

- ^{68}Ga -DOTATATE is a somatostatin analog that binds to somatostatin receptors (SSTRs) found on the surface of neuroendocrine cells and allows for detection of neuroendocrine tumors
- Physiologic uptake in spleen, adrenal glands, kidney, pituitary gland, liver, salivary glands, and thyroid gland
- Known interpretive pitfalls: prominent pancreatic uncinate process activity, inflammation, osteoblastic activity, splenunculi or splenosis, and benign meningioma
- First reported case of ^{68}Ga -DOTATATE uptake in SCA was in December 2020

Discussion

- Core needle biopsy revealed serous cystadenoma
- Based on the benignity and slow rate of growth for serous cystadenomas, borderline unresectable/possibly unresectable nature of this patient's lesion, asymptomatic nature of patient, and potential pancreatic insufficiency following surgery, it was decided to follow patient in 3 months for re-imaging rather than surgically excise the lesion.

References

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